



United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NO. FILING DATE		FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
09/698,201 10/30/2000		Tae-kyung Kim	1293.1144/MDS		
21171 759	90 05/03/2004		EXAMINER		
STAAS & HA	LSEY LLP	CHU, KIM KWOK			
SUITE 700	RK AVENUE, N.W.		ART UNIT	PAPER NUMBER	
WASHINGTON	•		2653	J.	
			DATE MAILED: 05/03/2004	7	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summar		Appl		n No.	Applicant(s)				
			09/698,20	1	KIM ET AL.				
			Examiner		Art Unit				
			Kim-Kwok	CHU	2653				
The MAILING DATE of this communication appears on the cover sheet with the correspondence address Period for Reply									
THE - External after of the control	ORTENED STATUTORY PERIOD MAILING DATE OF THIS COMMUNION of time may be available under the provisions of time may be available under the provisions of time may be available under the provision of time may be period for reply specified above is less than this period for reply is specified above, the maximum to the provision of t	JNICATION. ions of 37 CFR 1.13 ommunication. ty (30) days, a reply n statutory period w eply will, by statute, ths after the mailing	36(a). In no even within the staturill apply and will cause the appl	ent, however, may a reply be ting story minimum of thirty (30) day I expire SIX (6) MONTHS from ication to become ABANDONE	mely filed ys will be considered time the mailing date of this of D (35 U.S.C. § 133).	ły. xommunication.			
Status									
1)⊠	Responsive to communication(s)	filed on Amer	ndment file	d on 4/14/04 (paper 1	2).				
· —	This action is FINAL .	2b)⊠ This							
3)□	· · · · · · · · · · · · · · · · · · ·								
	closed in accordance with the pra	actice under E	х рапе Qu	ayle, 1935 C.D. 11, 4	53 U.G. 213.				
Disposit	ion of Claims								
5)⊠ 6)⊠ 7)⊠	 4) Claim(s) 1-82 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5) Claim(s) 1-10,12-38, 4048,50-59,61-73 and 75-82 is/are allowed. 6) Claim(s) 49,60 and 74 is/are rejected. 7) Claim(s) 11 and 39 is/are objected to. 8) Claim(s) are subject to restriction and/or election requirement. 								
Applicat	ion Papers								
•—	The specification is objected to by								
10)[10) The drawing(s) filed on is/are: a) □ accepted or b) □ objected to by the Examiner.								
	Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).								
11)	Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 1) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.								
Priority (under 35 U.S.C. § 119								
 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of: 1. Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. 									
Attachmer	nt(s)								
	ce of References Cited (PTO-892)			4) Interview Summary	(PTO-413)				
3) 🔲 Infor	ce of Draftsperson's Patent Drawing Reviet mation Disclosure Statement(s) (PTO-1449 er No(s)/Mail Date			Paper No(s)/Mail D 5) Notice of Informal F 6) Other:		O-152)			

Claim Objections

- 1. Claim 39 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.
- (a) Claim 39 is identical to claim 11 and claim 39 depends on claim 11. Therefore, claim 39 does not further limit claim 11.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

- 2. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 3. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwagi (U.S. Patent 6,069,868) in view of Kobayashi (U.S. Patent 5,724,335).

1

Kashiwagi teaches an optical pickup very similar to that of the instant invention. For example, Kashiwagi teaches the following:

- (a) as in claim 49, a light source 21 to generate a first light beam 23 with a wavelengths of roughly 400 nm for use with recording and/or reproducing with respect to a first medium 31 (Figs. 1 and 4; column 7, lines 17-21);
- (b) as in claim 49, a second light beam with a wavelength of roughly 650 nm for use with recording and/or reproducing with respect to a second medium 32 other than the first medium (Figs. 1 and 4; column 7, lines 48-52);
- (c) as in claim 49, an optical element 23 to focus a generated one of the first and second light beams onto a received one of the first and second media (Figs. 1 and 3);
- (d) as in claim 49, a detector 24 to detect the generated light beam reflected from the received one medium (Figs. 1 and 3); and
- (e) as in claim 49, the optical pickup focuses the first and second light beams onto the corresponding first and second media with negligible aberration (Figs. 1 and 3).

However, Kashiwagi does not teach the following:

- (a) as in claim 49, a collimating lens arranged in an optical path between the light source and the optical element;
 - (b) as in claim 49, the collimating lens having a diverging

lens with a diverging power; and

(c) as in claim 49, the diverging power of the diverging lens is sufficient to allow the optical element to focus the first light beam onto the first medium with negligible aberration.

Kobayashi teaches an optical pickup with two different wavelengths having the following features:

- (a) a collimating lens arranged in an optical path between the light source 21 and an optical element 23 (Fig. 25, column 1, lines 43-47);
- (b) the collimating lens having a diverging lens with a diverging power (Fig. 25, column 1, lines 43-47);
 and
- (c) the diverging power of the diverging lens is sufficient to allow the optical element to focus the first light beam onto the first medium with negligible aberration (Fig. 25; column 1, lines 43-47).

To eliminate stray light beams, it would have been obvious to one of ordinary skill in the art to use a collimating lens such as Kobayashi's in Kashiwagi's optical pickup, because the collimating lens regulates Kashiwagi's light beam into a parallel light beam.

Furthermore, to reduce the aberration effect when a light beam is focused on a medium's surface with deviated thicknesses

09/698,201 page 5 AU 2653

such as Kashiwagi's two layer medium, it would have been obvious to one of ordinary skill in the art to use the collimating lens with a diverging lens such as Kobayashi's in Kashiwagi's optical pickup, because the diverging lens varies the angle of the light beam being focused by the objective lens so that the correct focus point on the medium's layer is obtained.

4. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwagi (U.S. Patent 6,069,868) in view of Kobayashi (U.S. Patent 5,724,335).

Kashiwagi teaches an optical pickup very similar to that of the instant invention. For example, Kashiwagi teaches the following:

- (a) as in claim 60, a light source 21 to generate a light beam 23 with a wavelengths is less than roughly 500 nm (Figs. 1 and 4; column 7, lines 17-21; wavelength is 410nm which is roughly less than 500 nm);
- (b) as in claim 60, another light beam with a wavelength more than roughly 500 nm (Figs. 1 and 4; column 7, lines 48-52; 650 nm roughly more than 500 nm);
- (c) as in claim 60, an optical element 23 to focus the beams onto respective media (Figs. 1 and 3);
- (d) as in claim 60, a detector 24 to detect a respective light beam reflected from the corresponding media (Figs. 1 and

3); and

(e) as in claim 60, the optical system focuses the light beams onto respective media with negligible aberration (Figs. 1 and 3).

However, Kashiwagi does not teach the following:

- (a) as in claim 60, a collimating lens arranged in an optical path between the light source 21 and the optical element23; and
- (b) as in claim 60, the collimating lens has a surface of diverging power.

Kobayashi teaches a collimating lens having a surface of diverging power (Fig. 25; column 1, lines 43-47).

To eliminate stray light beams, it would have been obvious to one of ordinary skill in the art to use a collimating lens such as Kobayashi's in Kashiwagi's optical pickup, because the collimating lens regulates Kashiwagi's light beam into a parallel light beam.

Furthermore, to reduce the aberration effect when a light beam is focused on a medium's surface with deviated thicknesses such as Kashiwagi's two layer medium, it would have been obvious to one of ordinary skill in the art to use the collimating lens with a diverging lens such as Kobayashi's in Kashiwagi's optical pickup, because the diverging lens varies the angle of the light beam being focused by the objective lens so that the correct

focus point on the medium's layer is obtained.

5. Claim 74 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwagi (U.S. Patent 6,069,868) in view of Kobayashi (U.S. Patent 5,724,335) and Kashiwagi (U.S. Patent 6,175,548).

Kashiwagi teaches an optical pickup very similar to that of the instant invention. For example, Kashiwagi teaches the following:

- (a) as in claim 74, a light source 21 to generate a light beam 23 with a wavelengths of blue laser range (Figs. 1 and 4; column 7, lines 17-21);
- (b) as in claim 74, another light beam with a wavelength suitable for recording and/or reproducing data with respect to a digital versatile disc (Figs. 1 and 4; column 7, lines 48-52; 650 nm is used in a DVD disc);
- (c) as in claim 74, an optical element 23 to focus the beams onto respective media (Figs. 1 and 3);
- (d) as in claim 74, a detector 24 to detect a respective light beam reflected from the media (Figs. 1 and 3); and
- (e) as in claim 74, the optical system focuses the light beams onto respective media with negligible aberration (Figs. 1 and 3).

However, Kashiwagi does not teach the following:

- (a) as in claim 74, a collimating lens arranged in an optical path between the light source 21 and the optical element 23;
- (b) as in claim 74, the collimating lens has a surface of diverging power; and
- (c) as in claim 74, the light sources to emit a light beam less than 400nm.

Kobayashi teaches a collimating lens having a surface of diverging power (Fig. 25; column 1, lines 43-47).

Kashiwagi teaches a blue laser having a range of 380 nm to 450 nm (column 3, lines 26-28).

To eliminate stray light beams, it would have been obvious to one of ordinary skill in the art to use a collimating lens such as Kobayashi's in Kashiwagi's optical pickup, because the collimating lens regulates Kashiwagi's light beam into a parallel light beam.

Furthermore, to reduce the aberration effect when a light beam is focused on a medium's surface with deviated thicknesses such as Kashiwagi's two layer medium, it would have been obvious to one of ordinary skill in the art to use the collimating lens with a diverging lens such as Kobayashi's in Kashiwagi's optical pickup, because the diverging lens varies the angle of the light beam being focused by the objective lens so that the correct focus point on the medium's layer is obtained.

With respect to the range of the blue laser light, although Kashiwagi's '868 patent does not give a range, in his '548 patent, Kashiwagi discloses the range of a blue laser can be less than 400 nm as claimed by Applicant's. Hence, for using a blue laser light source to read/write high density optical recording medium, it would have been obvious to one of ordinary skill in the art to choose the blue laser at less than 400 nm as Applicant's claim, because it is within the range of the wavelength a blue laser light source can generate.

Allowable Subject Matter

- 6. Claims 1-48, 50-59, 61-73 and 75-82 are allowable over prior art.
- 7. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

As in claims 1, 9, 15, 20, 25, 50, 61, 71 and 75, the prior art fail to teach or fairly suggest am optical pickup having a collimating lens including a diverging lens with diverging power and a focusing lens with focusing power. The collimating lens satisfies the relationship - 1.5 > f/fn, where f is a total focal length of the collimating lens, and fn is a focal length of the diverging lens.

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

8. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks Washington, D.C. 20231

or faxed to:

(703) 872-9306, (for formal communications intended for entry)

Or

(703) 746-6909, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim CHU whose telephone number is (703) 305-3032.

GC 4/26/04

Kim-kwok CHU Examiner AU2653 April 26, 2004

(703) 305-3032

WILLIAM KORZUCH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600